MATH1300: CALCULUS I

ADITHYA BHASKARA

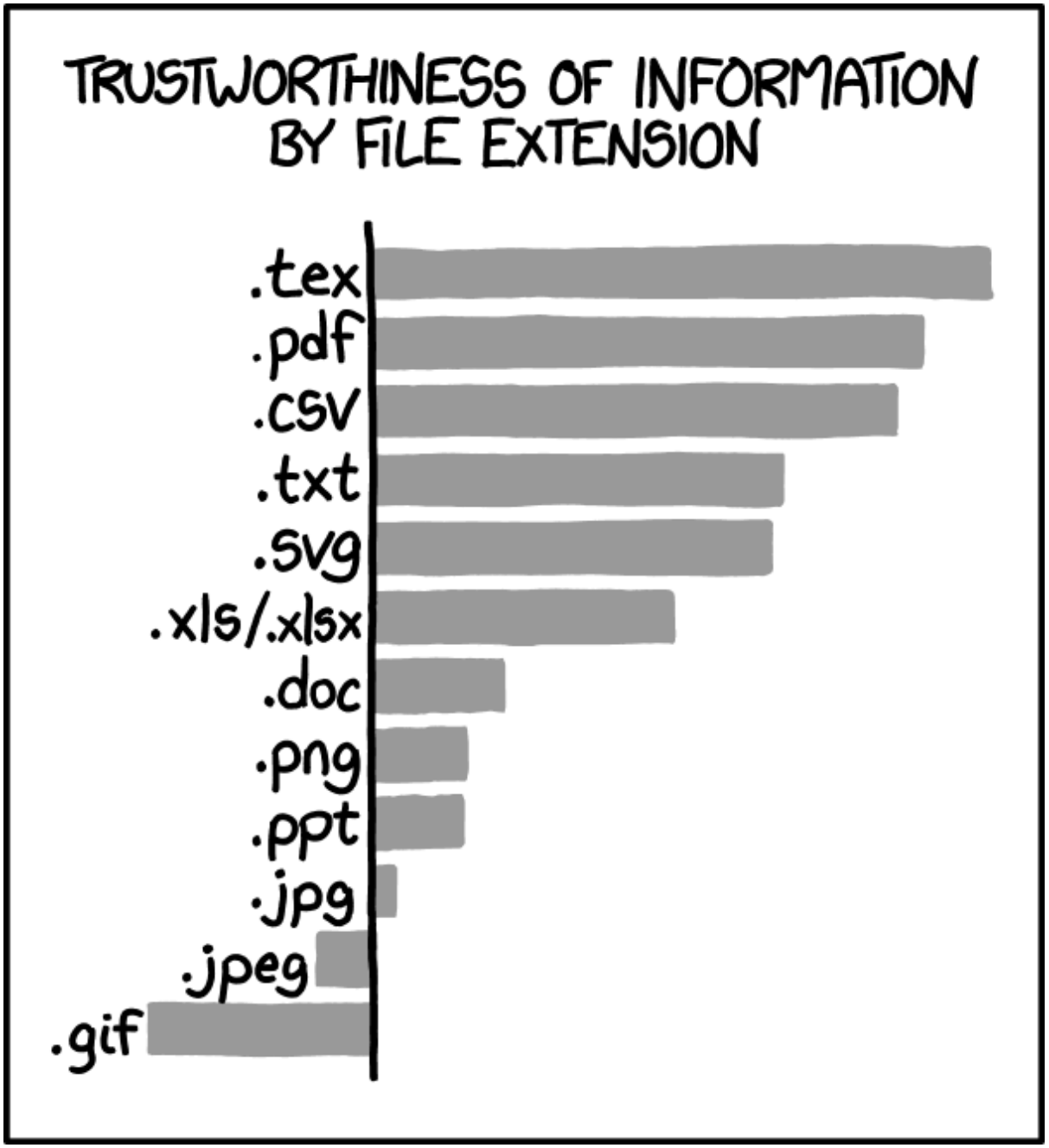
COURSE COORDINATORS: HARRISON STALVEY & CHRISTOPHER EBLEN

TEXTBOOK: JAMES STEWART

UNIVERSITY OF COLORADO BOULDER

EDITION 1

i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Preface

To the interested reader,

This document is a compilation of notes taken during the Spring 2023 semester for MATH1300: Calculus I at the University of Colorado Boulder during the author's tenure as a learning assistant for the course. The course used *Calculus – Concepts and Contexts*[1] by James Stewart as its primary text and was coordinated by Harrison Stalvey and Christopher Eblen. Additionally, in creating these notes, the author used *Calculus* by Ron Larson and Bruce Edwards. As such, many theorems, definitions, and examples may be quoted or derived from the aforementioned books.

The author would like to provide the following resources for students currently taking a Calculus I course:

1. Paul's *Online Math Notes* for Calculus I at Lamar University.
2. Professor Leonard's YouTube Calculus I Lectures.
3. 3Blue1Brown's *Essence of Calculus*.

Theorems, definitions, and examples may be quoted or derived from the aforementioned resources as well.

While much effort has been put in to remove typos and mathematical errors, it is very likely that some errors, both small and large, are present. If an error needs to be resolved, please contact Adithya Bhaskara at adithya.bhaskara@colorado.edu.

Best Regards,
Adithya Bhaskara

REVISED: January 13, 2023

[1] Stewart, J. (2010). *Calculus – Concepts and Contexts* (4th ed.). Cengage.

1 Functions and Models

1.1 Week 1: January 16 – January 20

2

Limits and Derivatives

3
Differentiation Rules

4

Applications of Differentiation

5 Integrals